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species of fungi, most of which were discovered during his studies of the fungous diseases of the cranberry. Three new genera are described: *Plagiorhabdus* (2 spp.), *Bothrodiscus*, and *Acanthorhynchus*.—O. STAPP (Jour. Linn. Soc. Bot. 38:6-17. 1907) has established a new genus (*Hallieracantha*) of Acanthaceae, to include species from Borneo and the Philippines heretofore referred to *Ptyssiglottis*; 19 species are recognized, 11 of which are new.—R. LAUTERBORN (Ber. Deutsch. Bot. Gesells. 25:238-242. 1907) has described a new genus (*Thioploca*) of sulfur bacteria, belonging to the Beggiatoaceae.—J. M. C.

The male gametophyte of the podocarps.—JEFFREY and CHRYSLER¹⁸ have been able to examine the male gametophyte of certain species of *Podocarpus* and *Dacrydium*, as well as of *Agathis*, obtained from New Zealand and Java, so far as material preserved in alcohol or formalin would permit. The conspicuous feature is the development of a prothallial tissue, by division of the two original prothallial cells, consisting in some cases of as many as eight cells. The walls of this tissue break down and the nuclei are freed, even from their cytoplasm, and swarm into the pollen tube. The authors do not regard this as a primitive feature, but consider the "ground plan" of this development as indicating the derivation of the podocarps and araucarians from an ancestral stock allied to the Abietineae. This feature also indicates that the podocarps and araucarians may be more nearly allied than has been supposed.—J. M. C.

Infection experiments with mildew.—REED¹⁹ has been investigating the question of "physiological species" among the mildews. Recent work on mildews has indicated that each genus, and often each species of host plant, has its own particular specialized form. Infection experiments were conducted with twenty-three different varieties of commonly cultivated cucurbits, representing five species and three genera (*Cucurbita*, *Cucumis*, and *Lagenaria*). Each of these hosts was readily infected when inoculated with the conidia taken from any other. There was no difference in the infecting power of the mildew on the different species and genera, and there is no evidence of any specialization in the mildew of the Cucurbitaceae.—J. M. C.

A lycopod with a seedlike structure.—Miss BENSON²⁰ has investigated the reproductive structures of BERTRAND'S *Miadesmia membranacea*, a herbaceous paleozoic lycopod. The megasporangium develops a single thin-walled spore, "which in development and structure resembles an embryo sac and germinates *in situ*." The sporangium is surrounded by an integument with a small micropyle, which is surrounded by numerous long processes of the integument that "formed

¹⁸ JEFFREY, E. C., and CHRYSLER, M. A., The microgametophyte of the Podocarpaceae. Amer. Nat. 41:355-364. figs. 5. 1907.

¹⁹ REED, GEORGE M., Infection experiments with the mildew on cucurbits, *Erysiphe cichoracearum* DC. Trans. Wis. Acad. Sci. 15:527-547. 1907.

²⁰ BENSON, M., *Miadesmia membranacea* Bertrand; a new paleozoic lycopod with a seed-like structure. Abstract read before Roy. Soc. London, June 13, 1907.

a collecting and incubating apparatus for the microspores." The "carpellary leaf" was shed at maturity and resembles a winged seed.—J. M. C.

The flowering plants of the Mesozoic.—In a recent address SCOTT²¹ has brought together the recent discoveries among the Cycadophytes, especially those of WIELAND among the Bennettitales, and has seen in the structure of their strobili strong suggestions of angiospermous flowers. Such a connection would suggest the possibility that the angiosperms may have been derived from the Filicineae by a "short cut;" that the evolution of the angiospermous flower was a process of reduction; and that the presumption that the simplest angiospermous flowers are the most primitive is no longer tenable.—J. M. C.

The Taxoideae.—Miss ROBERTSON²² has brought together the results of the recent researches among the Taxineae, with the view of reaching some conclusion as to the vexed question of phylogeny. She reaches the conclusion that the group has retained many relatively primitive characters, but has become considerably specialized; that it may be regarded as an offshoot from the Cordaitales, which in turn are derived from the Cycadofilices. The author also suggests that the "female flower" of *Taxus* "more closely recalls that of Cordaites than that of any other known plant."—J. M. C.

Embryology of Rhizophora.—COOK²³ has succeeded in securing some material for the study of the embryology of *R. Mangle*. Only one of the four ovules reaches the seed stage; the hypodermal archesporium cuts off two tapetal cells; the linear tetrad is probably formed; endosperm formation is abundant; the embryogeny is probably of the Capsella-type; during the first growth of the cotyledons about one-third of the embryo and the greater part of the endosperm are thrust out of the sac and lie in the ovary cavity.—J. M. C.

Endemic species and mutation.—WILLIS,²⁴ in following up the suggestions of his work upon the flora of Mt. Ritigala,²⁵ has constructed an argument against the origin of species by natural selection and in favor of origin by mutation. He maintains that the evidence of the endemic species on Mt. Ritigala, of Ceylon in general, of Mauritius, and of New Zealand completely proves his position.—J. M. C.

²¹ SCOTT, D. H., The following plants of the Mesozoic age, in the light of recent discoveries. Jour. Roy. Micr. Soc. 1907: 127-141. pls. 6-9.

²² ROBERTSON, AGNES, The Taxoideae: A phylogenetic study. New Phytol. 6:92-102. pl. 1. 1907.

²³ COOK, MELVILLE THURSTON, The embryology of *Rhizophora Mangle*. Bull. Torr. Bot. Club 34:271-277. pls. 22, 23. 1907.

²⁴ WILLIS, J. C., Some evidence against the theory of the origin of species by natural selection of infinitesimal variations, and in favor of origin by mutation. Annals Roy. Bot. Gard. Peradeniya 4:1-15. 1907.

²⁵ BOT. GAZETTE 43:353. 1907.